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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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DOWELL & DOWELL PC
2111 Eisenhower Ave.
Suite 406
Alexandria, VA 22314

EXAMINER

LEE, ANDREW CHUNG CHEUNG

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,841

Applicant(s)

NORMAN ET AL.

Examiner

Andrew C Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date Aug 28, 2001.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

- Fig. 4 (page 4/21 of drawings), "there are assumed to be four queue controllers 710₁, 710₂, 710₃, 710₄, that" as disclosed on page 40 line 10; and "let the request from queue controller 710₁, 710₂, 710₃, 710₄, be associated with....." on page 40 lines 11 – 12; also pages 40 – 43 with referenced queue controller 710₁, 710₂, 710₃, 710₄.
- Fig. 5 (page 5/21), "the data memory 502 includes three slots 508_A, 508_B, 508_C," as disclosed on page 49 lines 31 – 32; " a plurality of entries 514_A, 514_B," , as disclosed on page 50 , lines 7 –8; " the respective slots 508_A, 508_B," as disclosed on page 50, lines 9 – 10; " the entries 514_A, 514_B" as disclosed on page 50, line 13; and "let slots 508_A, 508_B, 508_C," as disclosed on page 51 line 31".
- Fig. 9 (page 9/21 of drawings), the reference element "a transmitter 940" as disclosed on page 70, line 20 and the reference element "via a *base_address* line 982" as disclosed on page 88, line 8; line 17.

- Fig. 11 (page 11/21 of drawings), the reference term " an alternative interconnect pattern 112" as disclosed on page 12, lines 30 – 31.
- Fig. 20 (page 21/21 of drawings), the reference element "*free_slot* lines 207" as disclosed on page 93, line 6 and lines 8 – 9, respectively.
- Fig. 14 (page 14/21 of drawings), the reference element " via an asynchronous peripheral bus 1472" as disclosed on page 97 lines 2 – 3.
- Fig. 16 (page 16/21 of drawings), the reference element " a transmitter 1440" as disclosed on page 100, line 24.

Reference characters mentioned in the description must appear in the drawings.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because Fig. 1 (page 1/21 of drawings), the reference number " 116' " and " 116" ". Reference characters (numerals are preferred), sheet numbers, and view numbers must be plain and legible, and must not be used in association with brackets or inverted commas, or enclosed within outlines, e.g., encircled. They must be oriented in the same direction as the view so as to avoid having

to rotate the sheet. Reference characters should be arranged to follow the profile of the object depicted. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 – 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (U.S. Patent No. 6731631 B1).

Regarding Claims 1, 13 and 17, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16), comprising: a) a routing layer (column 2, lines 20 – 22; lines 37 – 43), said routing layer including a plurality of I/O ports for exchanging data with components external to said router (Fig. 3, element 302a; Fig. 4, elements 402, 420, 414; column 7, lines 1 – 3); b) a switching layer to switch data packets between I/O ports of said routing layer (Fig. 3, elements 302a, 302b (layer 2/3/4 Switching Controller); column 7, lines 53 – 58); c) said switching layer including an array of cells in communication with said routing layer for permitting exchange of data packets between said array of cells and said routing layer (Fig. 22, Fig. 28, element 2812; column 18, lines 1 – 7; lines 19 – 30); d) each cell including a memory for receiving a data packet from said routing layer (Fig. 20, column 16, lines 2 – 6); e) said routing layer including a controller to control release of a data packet toward a cell of said array at least in part

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on a basis of a degree of occupancy of the memory in said cell (column 16, lines 33 – 41).

Regarding Claim 2, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 1, wherein said routing layer comprising a memory for storing data packets for release to said switching layer (Fig. 3, elements “lookup memory and packet memory”), said controller controlling release of data packets from the memory of said routing layer (Fig. 3, element “Octal Fast Port Controller”; column 7, lines 25 – 35).

Regarding Claim 3, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 2, wherein the memory of said routing layer includes an area for storing data indicative of a degree of occupancy of the memory of said cell (Fig. 20, column 16, lines 2 – 6; column 16, lines 33 – 41).

Regarding Claim 4, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 3, wherein said controller is in communication with said memory to obtain access to the data indicative of a degree of occupancy of the memory of said cell (column 16, lines 33 – 41), said controller controlling release of data packets from the memory of said routing layer at least in part on a basis of the data indicative of a degree of occupancy of the memory of said cell (column 16, lines 24 – 32; lines 33 – 41).

Regarding Claim 5, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 4, wherein the memory of said routing layer includes a plurality of areas associated with respective cells of said array (Fig.3, element “Lookup memory”), each area operative to store data indicative of a degree of occupancy of the memory of a corresponding cell (column 16, lines 24 – 32; lines 33 – 41).

Regarding Claim 6, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 5, wherein said controller (Fig. 3, elements “Layer 2/3/4 Switching Controller” of reference elements 302a and 302b; column 15, lines 53 - 63) is responsive to a control signal issued by said switching layer to alter the data indicative of a degree of occupancy of the memory of a given cell in the area associated with the given cell (column 16, lines 24 – 32; lines 33 – 41).

Regarding Claims 7 and 15, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 6, wherein each cell of said switching layer is operative to issue a control signal to said controller to convey to said controller data indicative of the degree of occupancy of the memory of the cell (Fig. 17, column 14, lines 40 – 54).

Regarding Claims 8 and 14, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 7, wherein the memory of each cell is

partitioned into slots (Fig. 17, elements 1710, 1714 etc. ;column 14, lines 31 – 34), each slot capable of storing a data packet (column 13, lines 64 – 67).

Regarding Claim 9, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 8, wherein each area associated with a given cell of said array is partitioned into zones (Fig. 17, column 14, lines 31 – 36), each zone being associated with a slot of the memory of the given cell (column 14, lines 40 – 43), each zone containing data indicating if the associated slot of the memory of the given cell is available for reception of a data packet (column 14, lines 43 – 47).

Regarding Claims 10, 16 and 18, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 9, wherein each cell of said array, in response to release of a data packet from a certain slot of the memory of the cell (Fig. 17 and Fig. 18, column 14, lines 58 – 65), issues the control signal to convey to said controller data indicative of the degree of occupancy of the memory of the cell (column 14, lines 43 – 47; column 16, lines 33 – 41).

Regarding Claim 11, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 10, wherein the control signal contains information identifying the certain slot of the memory of the cell (column 14, lines 45 – 48; lines 58 – 65).

Regarding Claim 12, Chang et al. discloses the limitation of a router (column 2, lines 14 – 16) as defined in claim 11, wherein said controller is responsive to the control signal containing information identifying the certain slot of the memory of the cell to alter the data in the zone of the memory of the routing layer associated with the certain slot (column 15, lines 3 – 20).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ACL

08 November 2004


Ajit Patel
Primary Examiner